



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Chiou et al.

Application Serial No.: 10/040,233

Filed: November 7, 2001

For: Novel Design and Fabrication Method for Finger N-Type Doped  
Photodiodes with High Sensitivity for CIS Products

Patent No.:

Issue Date:

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

**CERTIFICATE UNDER 37 C.F.R. §3.73(b)  
ESTABLISHING RIGHT OF ASSIGNEE TO TAKE ACTION**

1. The assignee of the entire right, title and interest hereby seeks to take action in the PTO in this matter.

**IDENTIFICATION OF ASSIGNEE**

2. The assignee of this matter is:

**TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.**

8, Li-Hsin Rd. 6

Hsinchu Science Park

Hsinchu, Taiwan 300-77, R.O.C.

**PERSON AUTHORIZED TO SIGN**

3. Daniel R. McClure  
Attorney for Assignee

4. A chain of title from the inventor(s) to the current assignee is shown below:
- a. From: Yu-Zung Chiou, Kuen-Hsien Lin, Chen Ying Lieh, Shou-Yi Hsu  
To: Taiwan Semiconductor Manufacturing Co., Ltd.  
Recorded in PTO: Reel:      Frame:
- b. From:  
To:  
Recorded in PTO: Reel:      Frame:

Recorded in PTO: See Attached evidencing assignment that  
has already been filed. No Reel and Frame has been assigned as of yet.

#### **DECLARATIONS**

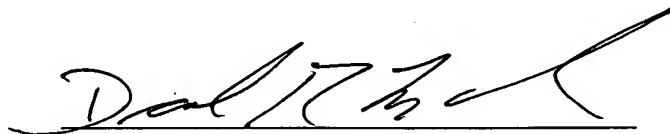
5. I, the undersigned, have reviewed all the documents in the chain of title of the

☒ application  
☐ patent

matter identified above and, to the best of my knowledge and belief, title is in the assignee identified above.

6. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

7. I, the person signing below, aver that I am empowered to sign this statement on behalf of the assignee.



**Daniel R. McClure, Reg. No. 38,962**

Tel. No. 770-933-9500  
Customer No.: 24504

**THOMAS, KAYDEN, HORSTEMEYER  
& RISLEY, L.L.P.**  
100 Galleria Parkway, Suite 1750  
Atlanta, Georgia 30339-5948

Docket No. 252016-1050

Office

08-14-2003

SECRET

U.S. DEPT. OF COMMERCE  
Patent and Trademark

D\$



LY

TS01-102

To the Honorable Commissioner of

102525071

original documents or copy thereof.

1. Name of conveying party(ies):

**YU-ZUNG CHIOU, KUEN-HSIEN LIN, CHEN YING  
LIEH, SHOU-YI HSU**

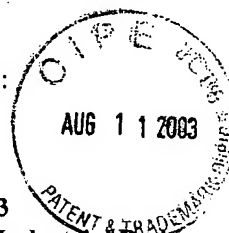
2. Name and address of receiving party(ies):

Name: **Taiwan Semiconductor Manufacturing  
Company**

Internal Address:

Street Address:

**121 Park Ave. 3  
Science-Based Industrial Park  
City: Hsin-Chu Zip:  
Country: Taiwan, R.O.C.**



Additional name(s) or conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance

☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ other \_\_\_\_\_

Execution Date: **10/8/01**

Additional name(s) & address(es) attached? Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: **10/8/01**

A. Patent Application No(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: **GEORGE O. SAILE**

Internal Address: \_\_\_\_\_

Street Address: **20 MCINTOSH DRIVE**

City: **POUGHKEEPSIE** State: **NY** ZIP: **12603**

6. Total no. of applications and patents involved: **1**

7. Total fee (37 CFR 3.41): **\$ 40.00**

☐ Enclosed

☒ Authorized to be charged to deposit acct.

8. Deposit account number: **19-0033**

(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief the foregoing information is true and correct and any attached copy is a true copy of the original document

**STEPHEN B. ACKERMAN**

Name of Person Signing

*[Signature]*

Signature

**11/7/01**

Date

08/13/2003 GTDN11 00000144 190033 ACKERMAN S

01 FC:8021 40.00 DA

Office

**PATENTS ONLY**

TS01-102

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

YU-ZUNG CHIOU, KUEN-HSIEN LIN, CHEN YING  
LIEH, SHOU-YI HSUAdditional name(s) or conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance

☒ Assignment ☐ Merger☐ Security Agreement ☐ Change of Name☐ other \_\_\_\_\_Execution Date: 10/8/01

2. Name and address of receiving party(ies):

Name: Taiwan Semiconductor Manufacturing  
Company

Internal Address:

Street Address:

No. 8, Li-Hsin Rd. 6  
Science-Based Industrial Park  
Hsin-Chu, Taiwan 300-77  
Taiwan, R.O.C.Additional name & address attached? ☐ Yes ☒ No4. Application number(s) or patent number(s): 10/040,233

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No(s)B. Patent No.(s)Additional numbers attached? ☐ Yes ☒ No5. Name and address of party to whom correspondence  
concerning document should be mailed:Name: GEORGE O. SAILE

Internal Address: \_\_\_\_\_

Street Address: 28 DAVIS AVENUECity: POUGHKEEPSIE State: NY ZIP: 126036. Total no. of applications and patents involved:: 17. Total fee (37 CFR 3.41): \$ 40.00☐ Enclosed☒ Authorized to be charged to deposit acct.8. Deposit account number: 19-0033

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief the foregoing information is true and correct and any attached copy is a true copy  
of the original documentSTEPHEN B. ACKERMAN

Name of Person Signing



Signature

3/29/04

Date



MAR 07 2004

## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

FEBRUARY 27, 2004

PTAS



\*102525071A\*

GEORGE O. SAILE  
STEPHEN B. SCKERMAN  
20 MCINTOSH DRIVE  
POUGHKEEPSIE, NY 12603

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### UNITED STATES PATENT AND TRADEMARK OFFICE NOTICE OF NON-RECORDATION OF DOCUMENT

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By ☒ Inventor(s) or ☐ Present Owner

### ASSIGNMENT OF INVENTION

In consideration of the payment by ASSIGNEE to ASSIGNOR of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration,

#### ASSIGNOR:

**YU-ZUNG CHIOU**

Type or print name of ASSIGNOR

5F, No. 15, Alley 20, Lane 14,  
Address

Sec. 6, Luostu Rd, Taipei, Taiwan 116  
R.O.C

Republic of China  
Nationality

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Type or print name of ASSIGNOR

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**Chen Ying Lih**

Type or print name of ASSIGNOR

11F-2, No. 88, Sec. 1, Junghua E. Rd.  
Address

Dung Chin, Tainan, Taiwan 701,

R.O.C.  
Nationality

**SHOU-YI HSIU**

Type or print name of ASSIGNOR

5F1-3, No. 66, Minde Rd., Jidung Jen,  
Address

Hsinchu, Taiwan

Republic of China  
Nationality

#### ASSIGNEE:

**Taiwan Semiconductor Manufacturing Co. Ltd.**

**121 Park Ave. 3**

**Science-Based Industrial Park**

**Hsin-Chu, Taiwan, R.O.C.**

**Taiwan, R.O.C.**

Nationality

and the successors, assigns and legal representatives of the ASSIGNEE

(complete one of the following)

☒ the entire right, title and interest

☐ an undivided \_\_\_\_\_ percent (\_\_\_\_%) interest for the United States and its territorial possessions

(check the following box if foreign rights are also to be assigned)

☒ and in all foreign countries

in and to any and all improvements which are disclosed in the invention entitled:

**A Novel Design And Fabrication Method For Finger N-Type Doped Photodiodes With High Sensitivity For CIS Products**

and which is found in

- (a) ☒ U.S. patent application executed on even date herewith  
(b) ☐ U.S. patent application executed on \_\_\_\_\_  
(c) ☐ U.S. application serial no. \_\_\_\_\_ filed on \_\_\_\_\_  
(d) ☐ U.S. patent no. \_\_\_\_\_ issued \_\_\_\_\_  
(e) ☐ and any legal equivalent thereof in a foreign country, including the right to claim priority  
(also check (e) if foreign application(s) is also being assigned)

and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute, thereof, and as to letters patent any re-issue or re-examination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, I / We have signed this

Oct. 8, 2001 (Date of signing)

WARNING Date of signing must be the same as the date of execution of the application if item (a) was checked above.

Yue-Jung Chou  
Signature of ASSIGNOR(S)  
Kuen-Hsien Lin  
Chen Ying dieh  
Shen-Yi Hsu

If ASSIGNOR is a legal entity complete the following information

\_\_\_\_\_  
Type or print the name of the above person authorized to sign on behalf of ASSIGNOR

\_\_\_\_\_  
Title

Note: No witnessing, notarization or legalization is necessary, if the assignment is notarized or legalized then it will only be prima facie evidence (35 USC 261). Use next page if notarization is desired.

\_\_\_\_\_  
Notarization of Legalization Page Added.

Commissioner for patents  
Washington, D.C. 20231



**POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST**  
**(REVOCATION OF PRIOR POWERS)**

As assignee of record of each of the patent applications listed in the table of Attachment A,

**REVOCATION OF PRIOR POWERS OF ATTORNEY**

all powers of attorney previously given in each of the listed patent applications are hereby revoked, and

**NEW POWER OF ATTORNEY**

the following attorneys/agents are hereby appointed to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. I hereby appoint all attorneys of Thomas, Kayden, Horstemeier & Risley, L.L.P., who are listed under the USPTO Customer Number shown below as the attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, recognizing that the specific attorneys listed under that Customer Number may be changed from time to time at the sole discretion of Thomas, Kayden, Horstemeier & Risley, L.L.P., and request that all correspondence about the application be addressed to the address filed under the same USPTO Customer Number.

24504

Patent Trademark Office

Please direct all future correspondence and telephone calls to:

Daniel R. McClure, Reg. No. 38,962  
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.  
100 Galleria Parkway, Suite 1750  
Atlanta, Georgia 30339  
770-933-9500

**ASSIGNEE OF ENTIRE INTEREST**

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.  
8, Li-Hsin Rd. 6  
Hsinchu Science Park  
Hsinchu, Taiwan 300-77, R.O.C

**ASSIGNEE CERTIFICATION**

The certification under 37 C.F.R. §3.73(b) establishing the right of assignee to take action is attached hereto along with documentation evidencing same. Further, in my official position with Taiwan Semiconductor Manufacturing Company, Ltd., I am authorized to sign documents and otherwise act on its behalf in connection with the management and handling of patent applications and other intellectual property matters.

Date

July 24, 2004

Chien-Wei (Chris) Chou  
Director - Intellectual Property Division



No	Serial No	TSMC No.	Application Title	Filing Date	Assignment (Reel/Frame)
1	10/120,834	TS1999705C	Process For High Voltage Oxide And Select Gate Poly For Split-Gate Flash Memory	4/11/2002	012791/0621
2	10/074,882	TS2000885	Methodology To Reduce The Early Failure Rate By Applying Dynamic Voltage Stressing In Testing With Screen Criteria Of Delta LSB	2/12/2002	012599/0107
3	09/933,961	TS20010325	Electrostatic Discharge-Free Container For Insulating Articles	8/22/2001	012128/0489
4	10/058,473	TS20011063	Enhanced Adhesion Strength Between Mold Resin And Polyimide	1/28/2002	014216/0356
5	10/040,233	TS20010102	Novel Design And Fabrication Method For Finger N-Type Doped Photodiodes-With High Sensitivity For CIS Products	11/7/2001	Filed 3-29-04 Copy attached
6	10/225,803	TS20010389	HDP Gap-Filling Process For Structures With Extra Step At Side-Wall	8/22/2002	013228/0267
7	10/679,737	TS20011380B	Method For Forming A Novel Top-Metal Fuse Structure	10/6/2003	012593/0150
8	10/437,092	TS20010996B	Horizontal Surrounding Gate MOSFETS	5/13/2003	013308/0785
9	10/338,138	TS20011442	Integrated High Performance MOS Tunneling Led In ULSI Technology	1/8/2003	013647/0832
10	10/177,912	TS20011051	Structure And Method For Low-Stress Concentration Solder Bumps	6/20/2002	013041/0230
11	10/313,501	TS20011509	Multivariate RBR Tool Aging Detector	12/6/2002	Copy attached
12	09/932,680	TS1998850/85 2BCC	Tilt-Angle Ion Implant To Improve Junction Breakdown In Flash Memory Application	8/20/2001	010367/0646
13	09/905,408	TS20010133	Selective Formation Of Metal Gate For Dual Gate Oxide Application	7/16/2001	012011/0342
14	10/288,194	TS20020083	Self-Aligned Structure With Unique Erasing Gate In Split Gate Flash	11/8/2002	013483/0576
15	10/255,482	TS20020058	Method To Prevent Side Lobe On Seal Ring	9/26/2002	013341/0450
16	10/245,433	TS20011294	Metal Fuse For semiconductor devices	9/17/2002	

Date:

May 24, 2004

[Signature]